

REMARKS/ARGUMENTS

Reconsideration of the subject application is requested. Claims 5-27 are pending in the instant application with claims 6-10 having been previously withdrawn and claims 11-15 and 21-27 presently withdrawn by the Examiner as being directed to a non-elected invention. Claims 16 and 17 have been amended.

Claim Rejections – 35 U.S.C. § 112, second paragraph

In Section 5 of the Detailed Action portion of the Office Action, claims 16-20 were rejected under 35 U.S.C. § 112, second paragraph as failing to set forth the subject matter which the applicant regards as their invention. Specifically, independent claim 16 was rejected for reciting “one other component” where no “component” had been recited. Claim 16 has been amended to recite, *inter alia*, “a living transgenic bioluminescent plant that expresses at least one marine derived luciferase, luciferin or fluorescent protein component of a bioluminescent generating system”. Basis for this amendment can be found, for example, in the specification at page 24, lines 24-26. Applicant respectfully submits that amended claim 16, and the claims that depend therefrom, satisfy the requirements of 35 U.S.C. § 112, second paragraph.

Claim 17 was rejected under 35 U.S.C. § 112, second paragraph as allegedly being indefinite for reciting “visible by the unassisted eye”. Claim 17 has been amended to recite “directly visible by the naked eye”. The terms “directly visible” and “naked eye” clarify that no additional instrumentation is necessary to view the light emitting reaction. Basis for this amendment can be found, for example, in the specification at page 32, lines 25-27. Applicant respectfully submits that amended claim 17 satisfies the requirements of 35 U.S.C. § 112, second paragraph.

Claim Rejections – 35 U.S.C. § 102(b)

In Section 6 of the Detail Action portion of the Office Action, claims 16-20 were rejected under 35 U.S.C. 102(b) as allegedly being anticipated by Mayerhofer, et al.

("Mayerhofer"). Regarding claim 16, Mayerhofer was cited as disclosing: a plant that expresses Renilla luciferase, part of a bioluminescent generating system, and a plant food comprising luciferin (p. 1037, column 2), wherein supplying the plant food to the transgenic plant causes the plant to illuminate. This rejection is traversed.

The Applicant respectfully submits that claim 16 contains elements that are neither disclosed nor suggested by Mayerhofer. In particular, claim 16 recites a "plant food" that comprises at least one other component of a bioluminescent generating system. Mayerhofer discloses that root, stem and leaf portions of 10 individual plants were pooled and assayed (emphasis added). Mayerhofer also discloses that "leaves of the transgenic plants were sprayed evenly with the luciferin solution or completely submersed in it for a few seconds...when the substrate was applied to a portion of an intact leaf, light was emitted only from the affected area ...no spreading was observed within the leaf tissue." (p. 1034, column 1) Mayerhofer further discloses "when roots of whole plantlets were immersed in the substrate only the covered portions of the roots were emitting light. Therefore it seems to us that the substrate was taken up readily by the roots but ...may not be efficiently transported through the vascular tissue."

Contrary to the assertions of the Office Action, the Applicant respectfully submits that the luciferin solution disclosed in Mayerhofer is not a "plant food". As disclosed in Mayerhofer the bioluminescent activity is isolated to the specific regions where luciferin is supplied to the plant and is not consistent with a plant food that would be proliferated throughout the entire plant. As specifically stated in Mayerhofer, "no spreading was observed within the leaf tissue" and the luciferin "may not be efficiently transported through the vascular tissue". In order for a substance to be a "food" to a plant, such as a "plant food", the substance must be readily absorbed and distributed within the plant. The solution of Mayerhofer is not distributed within the plant.

In addition, claim 16 recites a living transgenic plant. The specimens disclosed in Mayerhofer that are contacted with a luciferin solution are either portions of plants removed from the overall plant, or plants that have been removed from soil. Accordingly, the plant specimens of Mayerhofer are not "living", at the time the luciferin is supplied to the specimen.

Accordingly, Applicant submits that claim 16, and the claims that depend therefrom, are patentable over the cited reference.

Dependent claim 17 has been amended, as discussed above, to recite that the illumination is "directly visible by the naked eye". Applicant submits that this feature is further patentable over Mayerhofer which discloses that a light emitting reaction is visible by low-light video-image analysis, as shown in Figures 3 and 4 (page 1035). As discussed in Applicant's specification at page 32, line 25 to page 33, line 27, the proportions of the bioluminescent components are selected to produce light "visible to the naked eye". Furthermore, as stated in Applicant's specification at page 33, lines 6-9, "because the conditions in which the reactions are used are not laboratory conditions and the components may be subject to storage, higher concentration [of bioluminescent components] may be used to overcome any loss of activity." Applicant submits that this feature is further patentable over the cited reference.

Applicant submits that claims 16-20 are patentable over the cited reference and are believed to be in condition for allowance. Allowance of the application is requested. If it would facilitate prosecution of this application, the Examiner is invited to telephone the undersigned at (412) 263-4362 to discuss such matters.

Respectfully submitted,



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